Complete Summary

GUIDELINE TITLE

Screening for osteoporosis in the adult U.S. population: ACPM position statement on preventive practice.

BIBLIOGRAPHIC SOURCE(S)

Lim LS, Hoeksema LJ, Sherin K, ACPM Prevention Practice Committee. Screening for osteoporosis in the adult U.S. population: ACPM position statement on preventive practice. Am J Prev Med 2009 Apr;36(4):366-75. [53 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Osteoporosis

GUIDELINE CATEGORY

Counseling
Prevention
Risk Assessment
Screening

CLINICAL SPECIALTY

Endocrinology
Family Practice
Hematology
Internal Medicine
Neurology
Preventive Medicine
Rheumatology

INTENDED USERS

Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To outline the American College of Preventive Medicine's (ACPM's) perspective on critical preventive medicine issues, in a timely fashion, in order to exert a positive influence on policy, practice, and research dealing with osteoporosis screening

TARGET POPULATION

- All adult patients aged $\geq$50 years
- Adult patients <50 years at risk for osteoporosis

INTERVENTIONS AND PRACTICES CONSIDERED

Screening/Prevention

1. Evaluation of risk factors for osteoporosis
2. Bone mineral density (BMD) testing: dual energy x-ray absorptiometry (DXA), calcaneal quantitative ultrasound (QUS), quantitative computer tomography (QCT)
3. Osteoporosis and fracture risk-assessment tools: osteoporosis risk estimation score for men, osteoporosis self-assessment screening tool (OST), osteoporosis risk assessment instrument (ORAI), simple calculated osteoporosis risk estimation score (SCORE), osteoporosis index of risk (OSIRIS), fracture-risk algorithm (FRAX), Women's Health Initiative (WHI) hip fracture risk calculator
4. Combinations of BMD measurement and risk assessment
5. Counseling on lifestyle modifications

MAJOR OUTCOMES CONSIDERED

- Incidence of osteoporosis
- Incidence of fractures
- Morbidity and mortality
- Sensitivity, specificity, and predictive values of screening tests for osteoporosis

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A review was done of English language articles published prior to September 2008 that were retrieved via search on PubMed, from references from pertinent review or landmark articles, and from websites of leading health organizations.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review
Review of Published Meta-Analyses

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

The medical literature was reviewed for studies examining the benefits and harms of osteoporosis screening. An overview is also provided of available modalities for osteoporosis screening, risk-assessment tools, cost effectiveness, benefits and harms of screening, rationale for the study, and recommendations from leading health organizations and the American College of Preventive Medicine (ACPM).

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

Studies suggest that bone mineral density (BMD) screening of older women and men is cost effective. Markov modeling showed that universal bone densitometry combined with alendronate therapy for those diagnosed with osteoporosis was highly cost effective for women aged ≥65 years. The costs per quality-adjusted life year (QALY) gained for women aged 65 years and 75 years were $43,000 and $5600, respectively. The screen-and-treat strategy was cost saving for women aged 85 years and 95 years. Universal densitometry screening of men aged ≥80 years, or men aged ≥65 years with a prior fracture, followed by bisphosphonate treatment was also cost effective. The costs per QALY gained were less than $50,000 for men aged ≥65 years with a prior clinical fracture and for men aged ≥80 years without a prior fracture. Assuming oral bisphosphonate costs of less than $500 per year, the screen-and-treat strategy demonstrated cost effectiveness for men aged as young as 70 years without a prior clinical fracture.

The National Osteoporosis Foundation (NOF), in their recently updated economic analysis, employed a fracture incidence–based model to identify the absolute 10-year hip fracture risk for which osteoporosis treatment became cost effective. A Markov-cohort model of annual United States (U.S.)Â aggregate incidence of clinical fractures examined costs in 2005 U.S. dollars and QALYs. Assumptions in this cost-effectiveness analysis included aggregated treatment costs of $600/year (drug and nondrug) for 5 years, with 35% fracture reduction by age, gender, and race/ethnicity groups. The absolute 10-year hip fracture probability at which treatment cost $60,000 per QALY gained was comparable across racial and ethnic groups, ranging from 2.5% in women aged 50 years to 4.7% in women aged 75 years. For men, the intervention thresholds for hip fracture were slightly higher, ranging from 2.4% to 4.7%.

METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Position statements are reviewed by the Policy Committee and then approved by the Board. In addition, the guidelines from the following major professional and health organizations were used for comparison of recommendations on osteoporosis screening:

- United States Preventive Services Task Force
- American Association of Clinical Endocrinologists
- American College of Obstetricians and Gynecologists
- Osteoporosis Society of Canada
- International Society for Clinical Densitometry
- National Osteoporosis Foundation
- American College of Physicians

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The American College of Preventive Medicine (ACPM) agrees with the United States Preventive Services Task Force (USPSTF) recommendation to screen all women aged ≥65 years. Older men also have an increased risk of osteoporosis. The authors therefore endorse the recommendations by National Osteoporosis Foundation (NOF) to screen men aged ≥70 years. Even though men experience the equivalent risk of a major osteoporotic fracture at age 75 years as a woman aged 65 years (assuming no prior fracture and normal body mass index [BMI]), screening men as young as 70 years has been shown to be cost effective. Screening for osteoporosis should be performed with bone mineral density (BMD) testing by dual energy x-ray absorptiometry (DXA) if available, and not more frequently than every 2 years. All adult patients aged ≥50 years should be evaluated for risk factors for osteoporosis. Younger postmenopausal women and men aged 50-69 years should undergo screening if they have at least one major or two minor risk factors for osteoporosis. Secondary causes of osteoporosis should be considered, with appropriate diagnostic workup, especially in men and younger postmenopausal women with osteoporosis.

Osteoporosis risk–assessment tools such as the Women's Health Initiative (WHI) Hip Fracture Risk Calculator (hipcalculator.fhcrc.org) and the fracture-risk algorithm (FRAX) tool (www.shef.ac.uk/FRAX) are useful supplements to BMD assessments because they provide estimates of absolute fracture risk based on population cohort studies. They can also be used, if BMD testing is not readily available or not feasible, to assist healthcare providers and patients make treatment decisions to reduce the risk of fracture.

The authors recommend that clinicians consider using an osteoporosis risk–assessment tool that estimates absolute fracture risk. Use of a 10-year absolute fracture risk–based score has generally been well received by physicians in practice and may even be preferred over *t*-score reporting alone. Fracture risk information can be presented in a more informative manner, making it easier to understand for both physicians and patients. This type of presentation may also improve recognition for appropriate pharmacologic intervention and medication adherence. In addition, using the combination of clinical risk factors and BMD measurements can improve sensitivity and specificity over using either alone.

The APCM recognizes that osteoporosis screening is only one arm of a multifaceted approach toward secondary and tertiary prevention of osteoporotic fractures. All patients should be provided with recommendations to ensure an adequate intake of calcium (1200 mg daily for adults aged ≥50 years); vitamin D (800-1000 IU for adults aged ≥50 years); and regular weight-bearing physical activity. In addition, smoking and excessive alcohol consumption should be strongly discouraged.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Reduction in morbidity and mortality from osteoporosis

POTENTIAL HARMS

Potential harms associated with osteoporosis screening and treatment include:

- Anxiety from perceived vulnerability to fracture when osteoporosis is identified
- False negative results from bone density screening, leading to missed opportunities for treatment
- Potential for harmful radiation exposure from repeated dual energy x-ray absorptiometry (DXA) scans
- Harms associated with osteoporosis screening from the adverse effects related to treatment of osteopenia or osteoporosis, such asÂ gastrointestinal problems, musculoskeletal side effects, risk of venous thromboembolism, and a risk of mild cardiac events

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The American College of Preventive Medicine (ACPM) Prevention Practice Committee coordinates the development of practice policy statements on preventive health care to provide guidance to clinicians. These position statements are brief summaries of ACPM viewpoints on important topics that have already been the focus of an evidence review, analysis, and recommendations by one or more entities outside of ACPM. For example, particular subjects for which the U.S. Preventive Services Task Force has developed recommendations are typically suitable topics for position statements (www.ahrq.gov/clinic/uspstfix.htm). The purpose of the position statements is to outline the ACPM´s perspective on critical preventive medicine issues, in a timely fashion, in order to exert a positive influence on policy, practice, and research dealing with the subject of the statement.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2009 Apr

GUIDELINE DEVELOPER(S)

American College of Preventive Medicine - Medical Specialty Society

SOURCE(S) OF FUNDING

American College of Preventive Medicine

GUIDELINE COMMITTEE

American College of Preventive Medicine (ACPM) Prevention Practice Committee

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

No financial disclosures were reported by the authors of this paper.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American College of Preventive Medicine Web site.

Print copies: Available from American College of Preventive Medicine, 1307 New York Ave, N.W., Suite 200, Washington, DC 20005-5603.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI Institute onÂ February 4, 2010. The information was verified by the guideline developer on March 4, 2010.

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